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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/801,979	03/07/2001	Hui Su	ARC920000134US1	5853

28342 7590 04/19/2005

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EXAMINER

HAN, QI

ART UNIT PAPER NUMBER

2654

DATE MAILED: 04/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/801,979	SU ET AL.	
	Examiner	Art Unit	
	Qi Han	2654	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 November 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10, 13-20 and 25-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10, 13-20 and 25-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>1/7/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Information Disclosure Statement

2. The references listed in the Information Disclosure Statement submitted on 01/07/2005 have been considered by the examiner (see attached PTO-1449).

Response to Amendments

3. This communication is responsive to the applicant's amendment dated 11/16/2004. Applicant amended claims 1, 13, 17 and 25, cancelled claims 11-12 and 21-24, and added new claims 25-30.

Response to Arguments

4. Applicant's arguments with respect to claims 1-10, 13-20 and 25-30 have been considered but are moot in view of the new ground(s) of rejection, since the amendment introduces new issue(s) and/or new subject matter(s).
5. In response to applicant's arguments regarding the "dwell time" in the prior art (amendment: page 15, paragraph 3), it is noted that: i. the amendment introduce new subject matter that is rejected under 35 USC 112 1st (see detail below); ii. the examiner has different of

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view of the prior art teachings and claim interpretations (see detail in claim rejection under 35 USC 103 below). Further, it is pointed out that the major roll of “dwell time” is to give a time period to allow system reliably identify at least one eye-scanned region/item, but not always to “confirm” an action for an identified region/item. In fact, no matter to confirm an action or not, processing an eye-scanned region/item always requires certain “dwell time” for stabilizing the eye-focused region/item, otherwise, the processing cannot reliably identify any useful region/item. As stated in the claim rejection, Forest discloses ‘dwell time may be continuous, discontinuous or dynamic for either or both sub-regions of the selectable region’, including ‘dwell event’ and ‘dynamic dwell event’ (column 26, line 65 to column 27, line 18),; which is believed to properly read on the claim.

Specification

The disclosure is objected to because of the following informalities:

On page 10, line 12, it appears a typographic error for the duplicated terms “Eyelid Tracking”. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 1-10, 13-20 and 25-30 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which

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was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding independent claim 13, the amended limitations “**typing** at least some initial **characters of a logographic based text**”, “a user’s eye **natural looking position**” and “**without requiring deliberate staring at the preselected one or more candidate characters**”, introduce new subject matter(s), since the limitations did not specifically described in the original specification.

Further, the limitation “**typing** at least some initial **characters of a logographic based text**” also introduces enablement problem, since the specification does not disclose how to typing a character of a logographic based text. As best understand in light of the specification (see Figs. 3-8, block 200), this limitation will be interpreted as “typing at least some initial PinYin characters representing a logographic based text” hereinafter.

Regarding independent claims 1 and 25, the rejection is based on the same reason described for claim 13, because the claims recite same or similar limitation(s) as claim 1.

Regarding dependent claims 2-10, 14-20 and 26-30, they inherit all limitations of their parent claim(s) respectively, including the rejected portions as stated above.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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7. Claims 1-7, 9-10, 13-20 and 25-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Forest et al. (US 5,999,895) hereinafter referenced as Forest in view of Chen (US 6,014,615), and further in view of van Cruyningen (US 5,805,167) hereinafter referenced as Cruyningen.

As per **claim 13**, as best understand in view of the rejection under 35 USC 112 1st (see above), Forest discloses the apparatus and method relating to data entry and menu selection for ideographic language (logographic based language) (Abstract), comprising:

“an input device for typing at least some initial Pin Yin characters representing logographic based text”, (column 67, lines 42-46, ‘a keyboard to enter (typing) a phonetic unit and intonation according to the Pin Yin (characters) coding method for the Chinese language (logographic based text)’);

“an eye-tracking apparatus that monitors a user’s eye natural looking position” (column 4, line 13-14, ‘an eye tracker that uses images of an individual’s eyes to determine (monitor) where his eyes are focusing (read on user’s eye natural looking position)’; column 13, lines 30-52, ‘the conventional eye gaze system (read on eye tracking apparatus)’);

a display for visually displaying one or more candidate characters of the logographic based language based on the typed initial characters”, (Figs. 61 and 64-65 and column 67, lines 2-56, ‘display of a general purpose computer system’, ‘ideographic language’, ‘visible subregion’ and ‘selectable region’, and blocks 3605 and 3609 shows the candidate characters to be selected);

“a panel that displays the one or more candidate characters based on the typed initial characters, and that allows a pre-selection of the one or more candidate characters based on the

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typed initial characters, and that allows a preselection of the one or more candidate characters by tracking the user's eye natural looking position without requiring deliberate staring at the preselected one or more candidate characters, in order to select a target character (Figs. 61 and 64-65, blocks 3684, 2605 and 3609, provide option menu(s) (panel) and/or selectable region(s)/subregion(s) (also interpreted as panel) on the screen for candidate characters; column 9, lines 35-40, 'conventional menu-driven data entry', 'the system then provides feedback... by highlighting the indicated selection'; column 26, line 65 to column 27, line 18, 'dwell time may be continuous, discontinuous or dynamic for either or both sub-regions of the selectable region' 'dwell event', 'dynamic dwell event'; which has capability of implementing the functionality as claimed);

"a user input device that generates a single confirmation input command for enabling the selection of the target character by multiplexing the user's eye natural looking position and the single confirmation input command", (column 68, lines 19-31, 'selection is made in accord with the dwell (nature looking)... alternatively, selection may be intersection of a location indicated by the at least part of a cursor and a selectable region along, ... by such intersection accompanied (multiplexing) by depression of a space bar (generating a single confirmation input command) on the keyboard, or other suitable means');

"a character output area that displays the selected target characters", (Figs. 64-65, blocks 3684, 2605 and 3609 shows the output and selectable characters on the screen).

Event though, Forest discloses displaying selectable regions and visible sub-regions, and entering input character, such as PinYin (column 65, lines 10-11), Forest does not expressly disclose "an input tracking bar that displays inputted characters". However, the feature of

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displaying inputted characters is well known in the art as evidenced by Chen who discloses system and method for processing morphological and syntactical analyses of inputted Chinese language phrases (title), comprising 'uses the keyboard to enter Pinyin text input' and 'displays the Pinyin characters' (column 6, lines 21-24). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Forest by specifically providing displaying inputted characters, as taught by Chen, for the purpose of displaying the inputted text on a separate section of a graphical interface (Chen: column 6, 25-26).

Further, Forest in view of Chen does not expressly disclose that "multiplexing visual recognition and the single confirmation input command accelerates text entry". However, this feature is well known in the art as evidenced by Cruyningen who discloses popup menus with directional gestures (title), comprising 'the eye-tracking mechanism in a heads-up display', and teaches that 'any input device or combination (multiplexing) of input devices that can generate a menu popup trigger event (so as to accelerate text entry), can be used to direct cursor position, and can produce the confirm menu item selection event will work' (column 15, lines 25-29). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Forest in view of Chen by specifically providing combination of an eye gaze mechanism result and single input command from other input device for a selection confirmation so as to accelerate text entry, as taught by Cruyningen, for the purpose of offering a desired display of information (Cruyningen: column 4, lines 30-31).

As per **claim 14** (depending on claim 13), Forest in view Chen and Cruyningen further discloses "a scrolling indicator that enables scrolling action between multiple pages",

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(Cruyningen: Fig. 22, shows multiple scrolling indicator for manus, which necessarily provides multiple page scrolling action).

As per **claim 15** (depending on claim 13), as state above, Forest discloses “the single confirmation input command includes a single manual confirmation key”, (Forest: column 68, lines 19-31, ‘depression of a space bar (a single manual confirmation key)’).

As per **claim 16** (depending on claim 13), Forest further discloses “the candidate characters include Chinese characters”, (Forest: Figs. 64-65, blocks 3605 and 3609).

As per **claim 17** (depending on claim 13), as state above, Forest in view Chen and Cruyningen discloses that “the eye-tracking apparatus visually highlights pre-selected candidate characters, (Forest: column 4, line 13-14, ‘an eye tracker that uses images of an individual’s eyes to determine (monitor) where his eyes are focusing’; column 9, lines 30-52, ‘highlighting the indicated section, showing which selection the operator has indicated’; Cruyningen: column 15, lines 52-54, ‘highlighted item’).

As per **claim 18** (depending on claim 15), Forest in view Chen and Cruyningen further discloses that the single confirmation key includes any one or more of: a space bar, a control key, an enter key, a dedicated key, a foot pedal, a mouse button, a pad tap, (Forest: column 68, lines 19-31, ‘depression of a space bar’).

As per **claim 19** (depending on claim 13), Forest in view Chen and Cruyningen further discloses that “the single confirmation input command includes a **voice command**”, (Cruyningen: column 9, lines 1-4, ‘a voice command’).

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As per **claim 20** (depending on claim 13), Forest further discloses that the display displays candidate characters in order of frequency of usage, (Forest: column 12, lines 59-64, 'the system displays ... the most of frequently used words... in order of frequency of use').

As per **claim 1**, it recites a method. The rejection is based on the same reason as described for claim 13, because the claim recites same or similar limitation(s) as claim 13.

As per **claims 2-7** (depending on claim 1), the rejection is based on the same reason as described for claims 15-20 respectively, because the claims recite same or similar limitation(s) as claims 15-20 respectively.

As per **claim 9** (depending on claim 3), Forest further discloses displaying the candidate characters in a single row, (Fig 65, see last row from bottom).

As per **claim 10** (depending on claim 3), Forest further discloses displaying the candidate characters in a staggered arrangement, (Fig 65, see right most box of the last row from bottom and Fig. 61).

As per **claims 25-30**, they recite a computer program product. The rejection is based on the same reason as described for claims 13 and 15-19 respectively, because the claims recite same or similar limitation(s) as claims 13 and 15-19 respectively.

8. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Forest in view Chen and Cruyningen as applied to claim 13 above, and further in view of well known prior art (MPEP 2144.03).

As per **claim 8** (depending on claim 7), even Forest discloses that the system displays the most of frequently used words in order of frequency of use (column 12, lines 59-64), Forest in

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view Chen and Cruyningen does not expressly disclose "displaying a most frequently used candidate character in a pre-selected position". However, an official notice is taken that the feature of displaying a most frequently used item in a pre-selected position is well known in the art. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify in view Chen and Cruyningen by specifically providing displaying a most frequently used item in a pre-selected position, for the purpose of easing the data management on a screen.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

10. A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

11. Please address mail to be delivered by the United States Postal Service (USPS) as follows:

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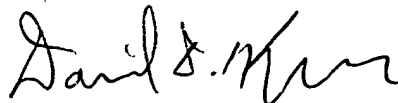
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Qi Han whose telephone numbers is (571) 272-7604. The examiner can normally be reached on Monday through Thursday from 9:00 a.m. to 7:00 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil, can be reached on (571) 272-7602.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Inquiries regarding the status of submissions relating to an application or questions on the Private PAIR system should be directed to the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or 703-305-3028 between the hours of 6 a.m. and midnight Monday through Friday EST, or by e-mail at: ebc@uspto.gov. For general information about the PAIR system, see <http://pair-direct.uspto.gov>.

QH/qh
March 31, 2005



DAVID D. KNEPPER
PRIMARY EXAMINER